10/528967

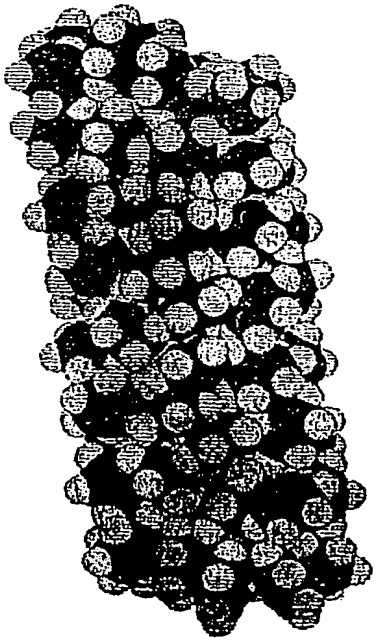
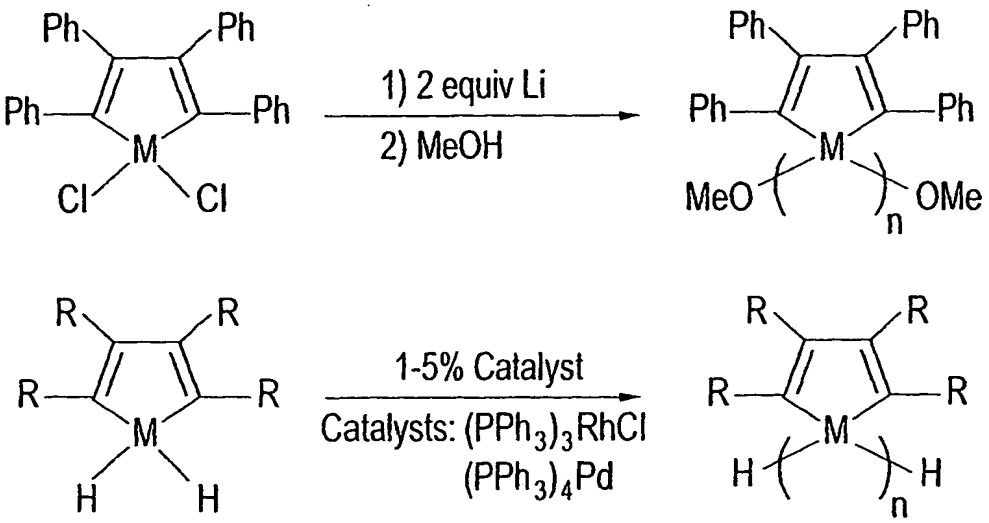


FIG. 1



where R is a H or an alkyl or aryl group selected from the group consisting of Me or Ph; and where M is selected from the group consisting of Si and Ge

FIG. 2

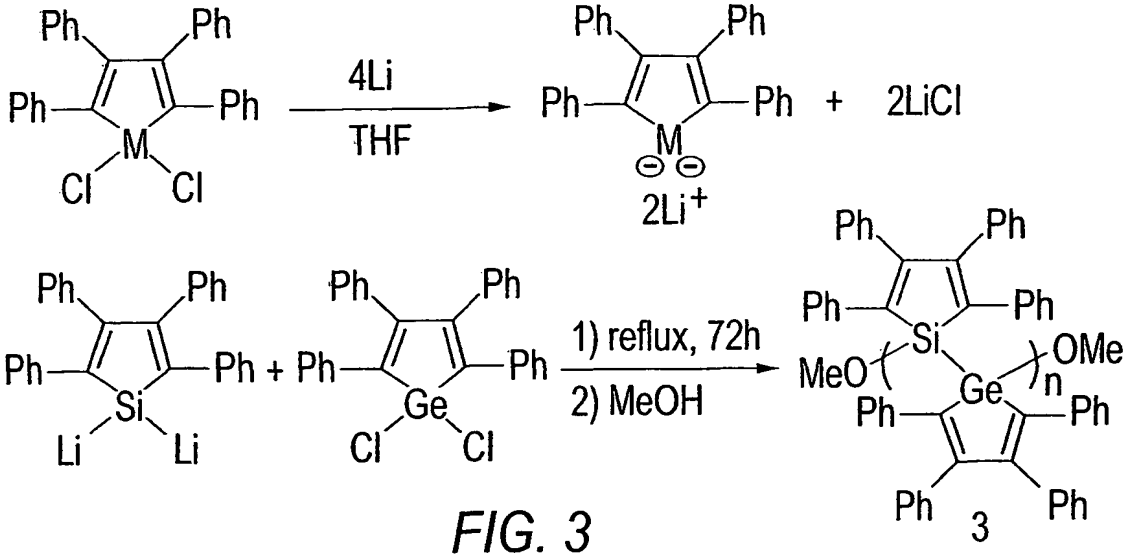
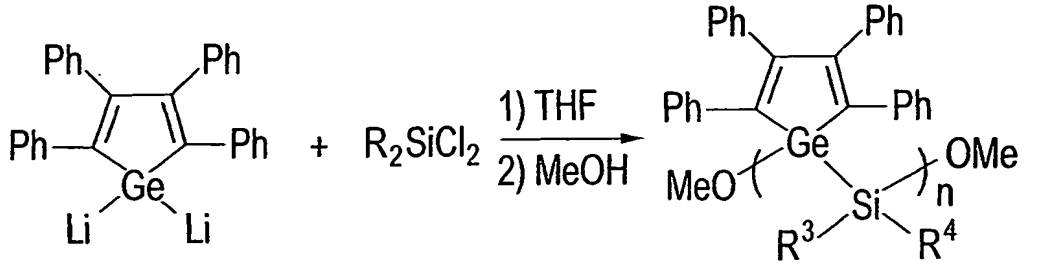


FIG. 3

4; R^1=H, R^2=Me
5; R^1=H, R^2=Ph
6; R^1=H, R^2=Me or Ph
7; R^1=Ph, R^2=Ph
8; R^1=Ph, R^2=H



9; R^3=H, R^4=Me
10; R^3=H, R^4=Ph
11; R^3=Ph, R^4=Me or Ph
12; R^3=Ph, R^4=Ph

FIG. 4

polymers	M_w	M_n	$\lambda_{abs}\ \pi-\pi^*,\ \sigma-\sigma_2+\pi^*$ (nm)	λ_{fluo} (nm)	$K_{SV}(M^{-1})$ PA	$K_{SV}(M^{-1})$ TNT	$K_{SV}(M^{-1})$ DNT	$K_{SV}(M^{-1})$ NB	t($x10^{-9}$s)
1	6.2×10^3	5.4×10^3	368, 314	513	11 000	4340	2420	1200	0.70[c]
2	4.6×10^3	4.4×10^3	368, 302	499	6710	2050	1010	320	0.28[d]
3	5.5×10^3	5.0×10^3	364, 302	510, 385	8910	3050	1730	753	0.43
4	4.4×10^3	4.2×10^3	370, 318	491	9120	3520	2060	1150	2.33
5	4.5×10^3	4.1×10^3	370,320	488	10 700	3940	2380	1230	1.34
6	4.8×10^3	4.1×10^3	368, 320	489	8420	3030	2010	735	2.20
7	5.0×10^3	4.8×10^3	364, 318	493	10 800	3430	2330	965	0.62
8	4.6×10^3	4.0×10^3	366, 324	505, 385	9350	3680	2340	864	2.70
9	4.9×10^3	4.4×10^3	364, 304	483, 400	10 300	3990	2570	1140	0.27
10	4.4×10^3	4.2×10^3	364, 304	486, 400	9990	3330	2000	965	0.35
11	4.1×10^3	3.9×10^3	364, 304	484, 400	8740	3430	2210	986	0.26
12	5.4×10^3	5.0×10^3	364, 306	480, 402	9840	3340	2150	936	0.22

FIG. 5

10/528967

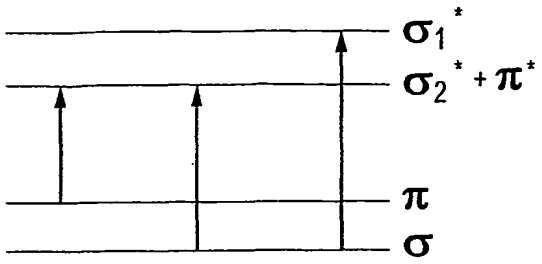

σ1*
σ2* + π*
π
σ

FIG. 6

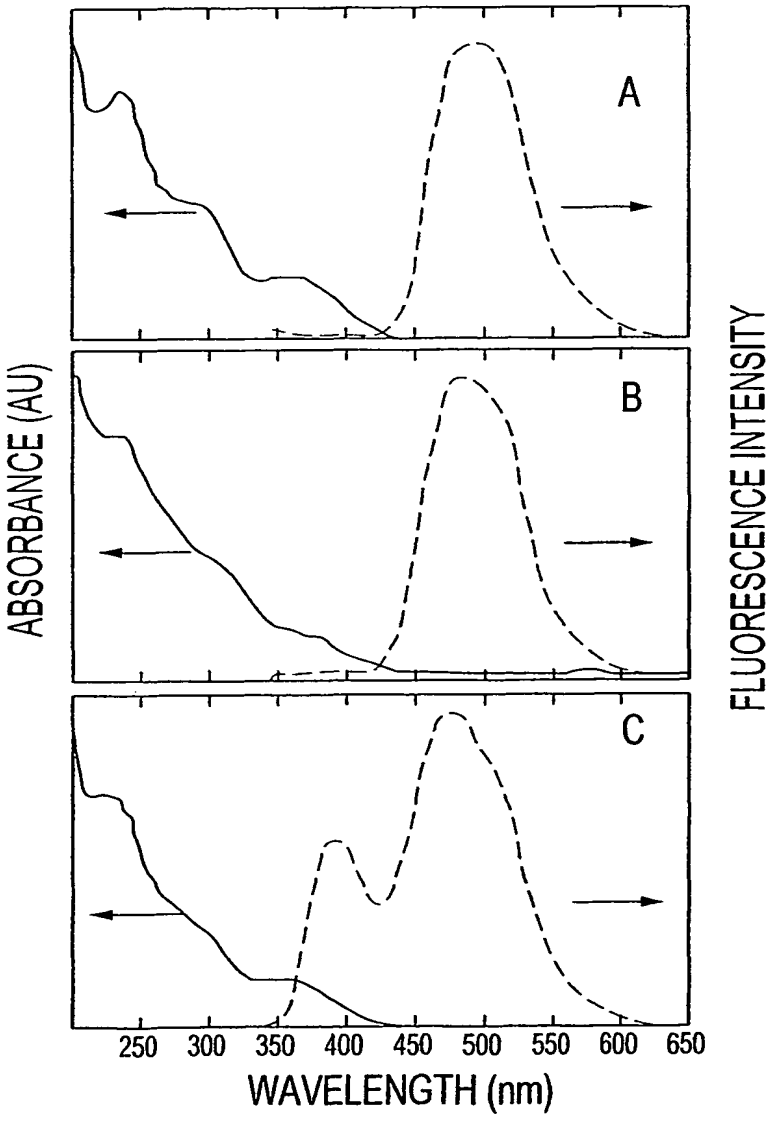

A
B
C
ABSORBANCE (AU)
FLUORESCENCE INTENSITY
250 300 350 400 450 500 550 600 650
WAVELENGTH (nm)

FIG. 7

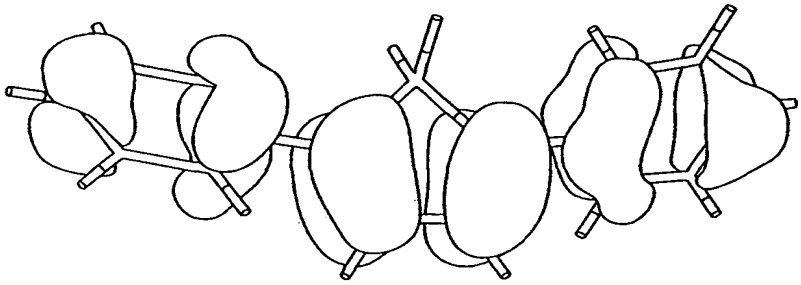


FIG. 8A

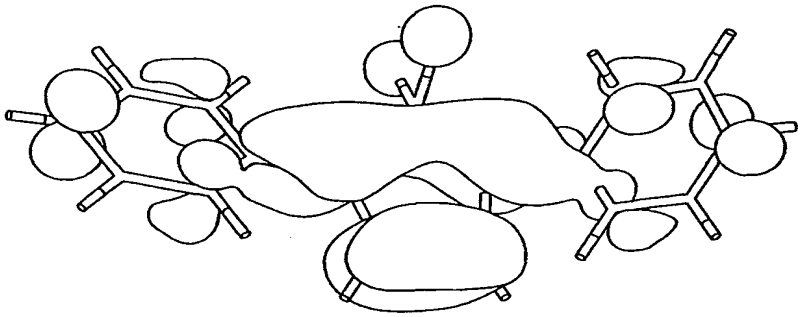


FIG. 8B

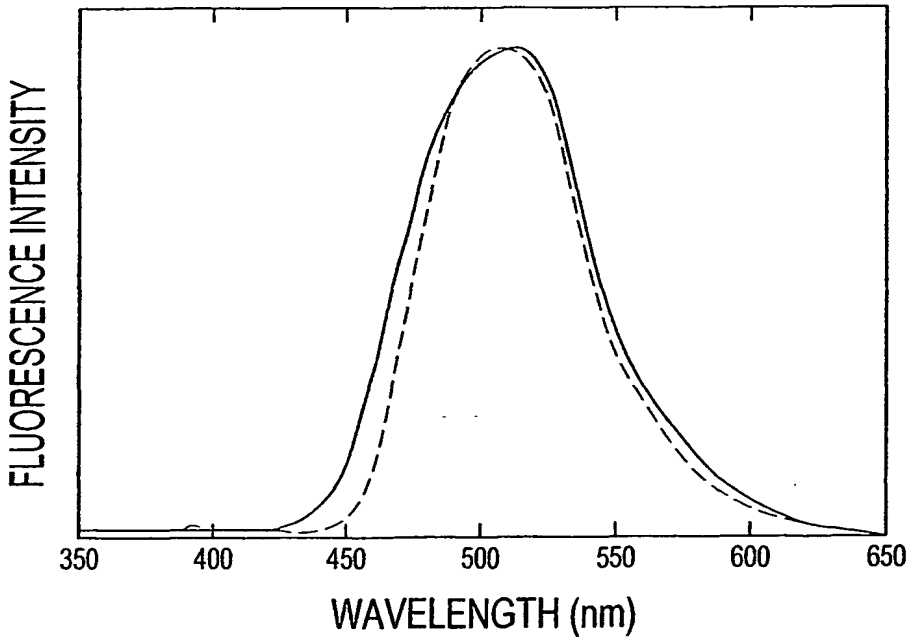


FIG. 9

10/528967

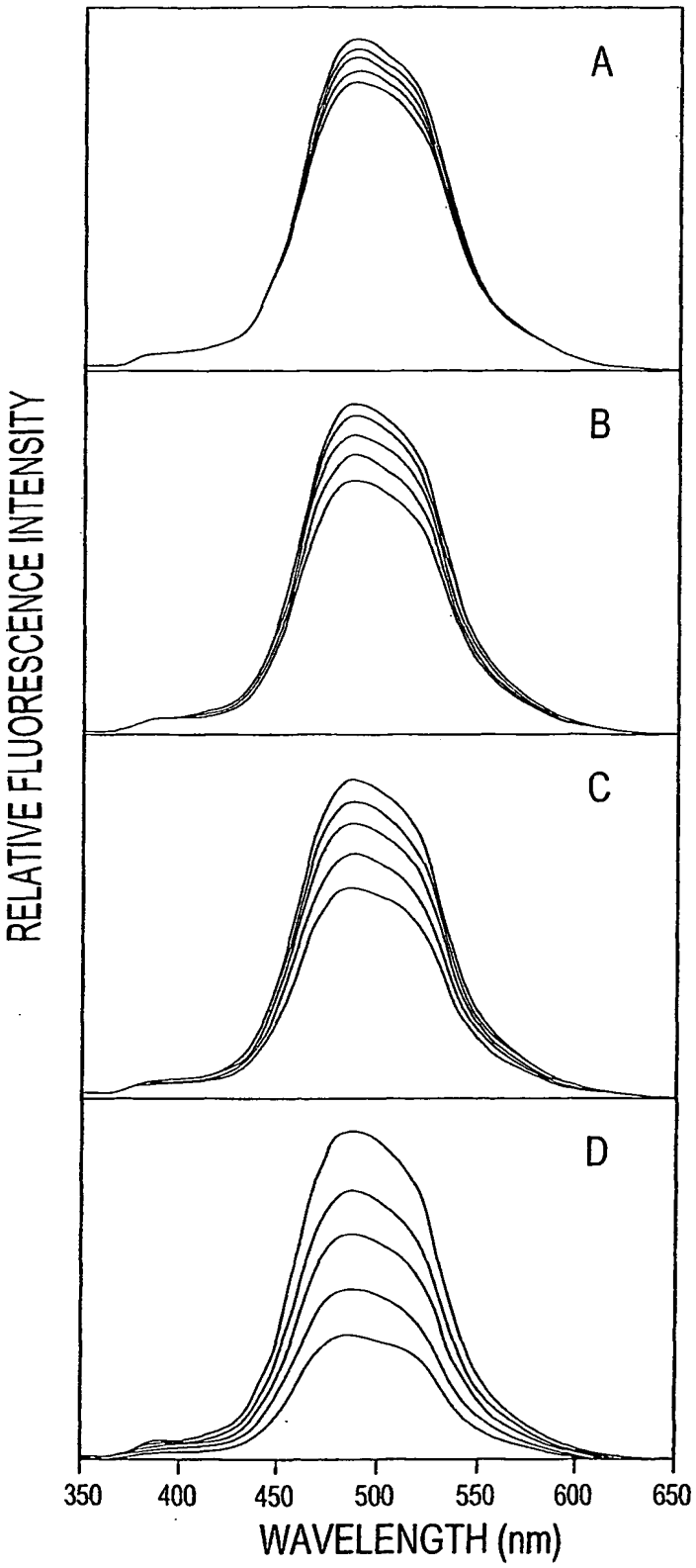


FIG. 10

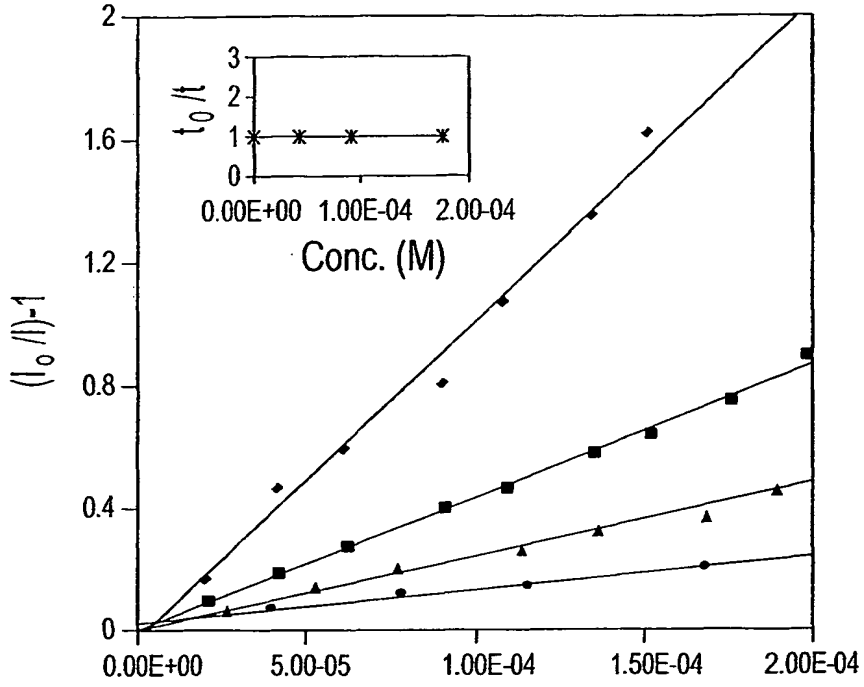


FIG. 11A

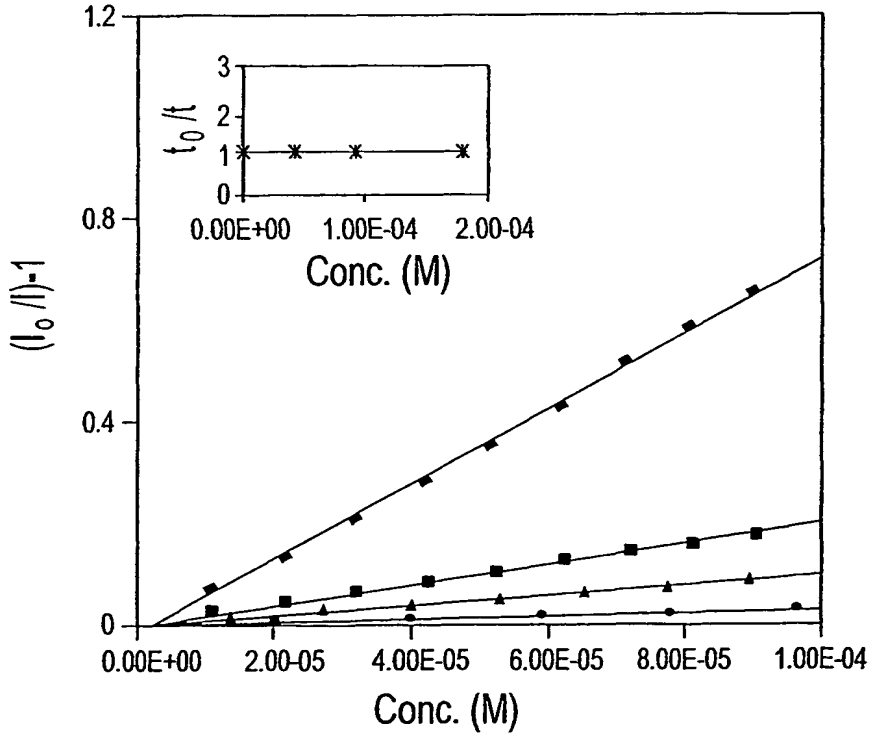


FIG. 11B

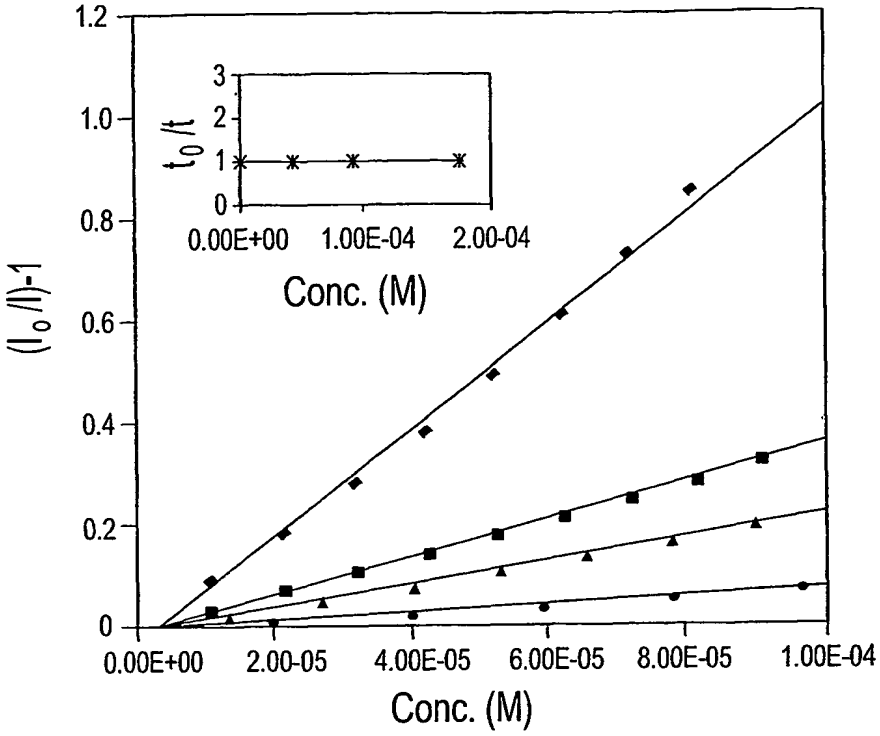


FIG. 11C

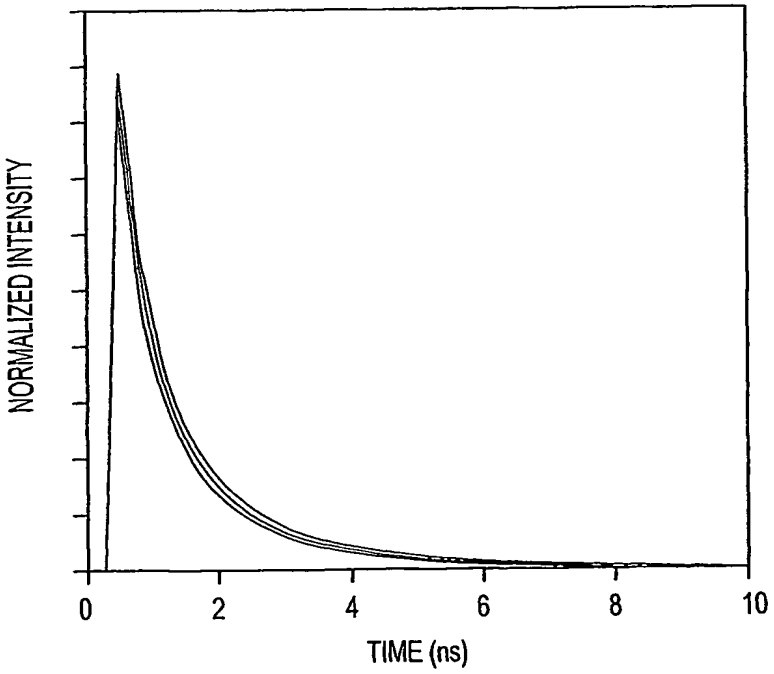


FIG. 12

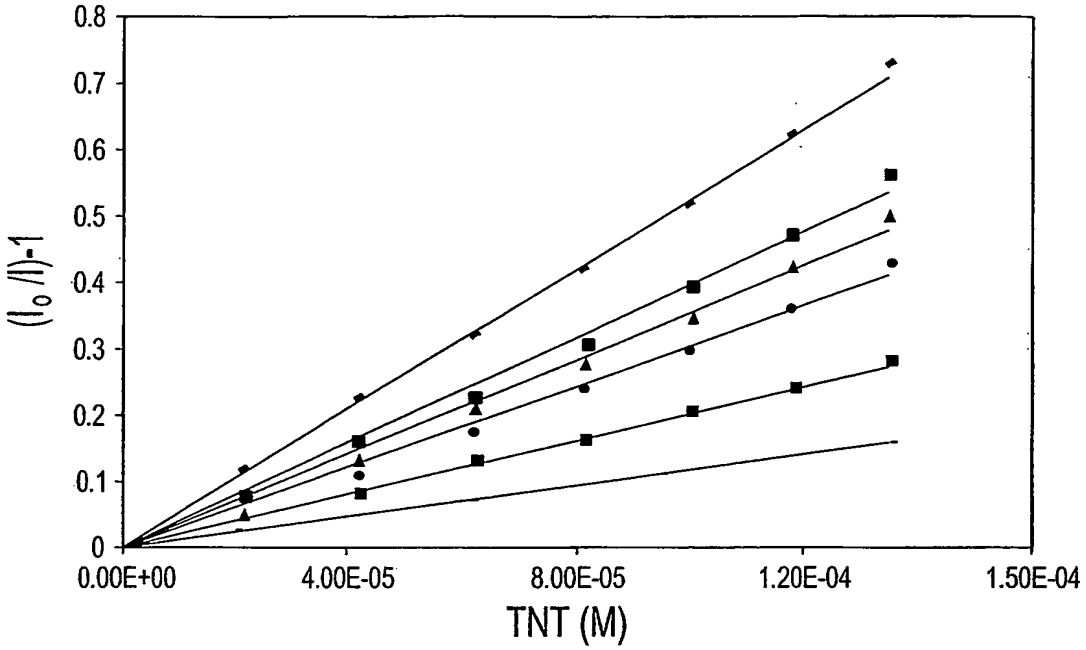

0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
$(I_0/I)-1$
0.00E+00
4.00E-05
8.00E-05
1.20E-04
1.50E-04
TNT (M)

FIG. 13

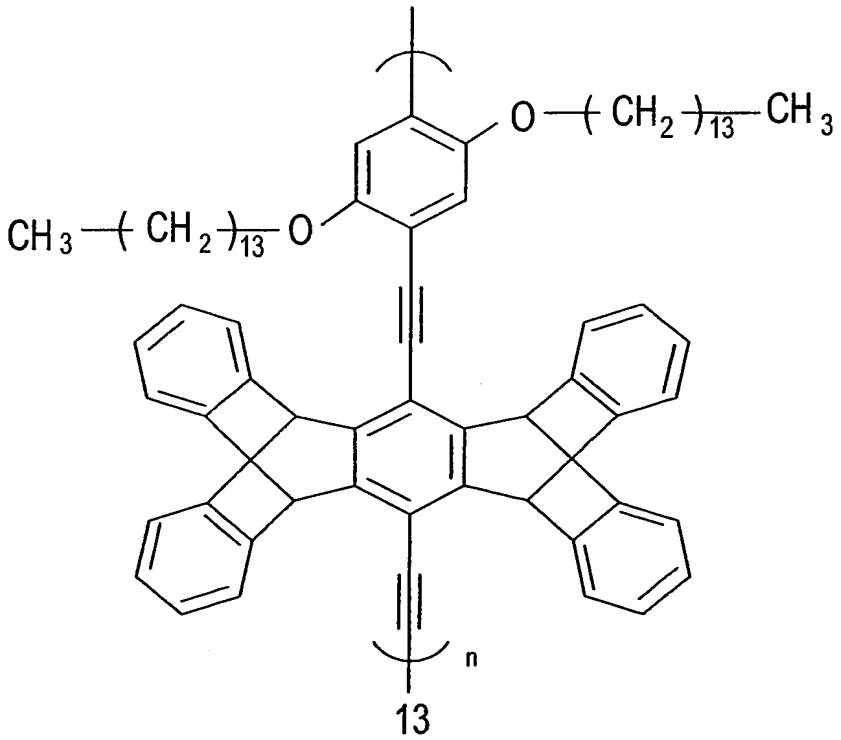

O—(CH2)13—CH3
CH3—(CH2)13—O
n
13

FIG. 14

10/528967

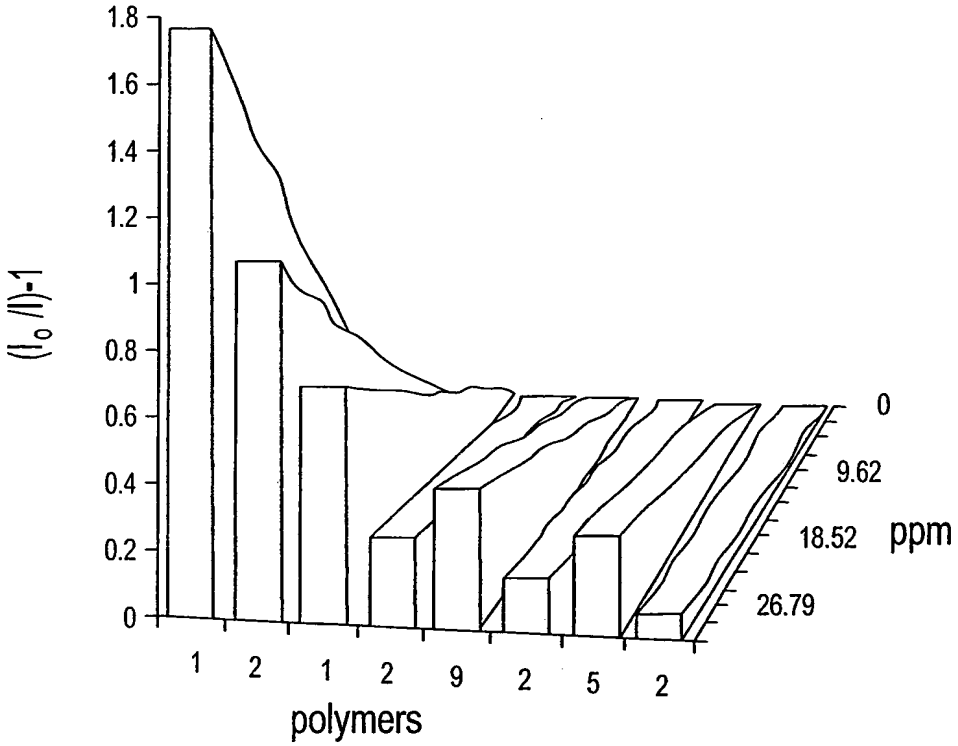


FIG. 15

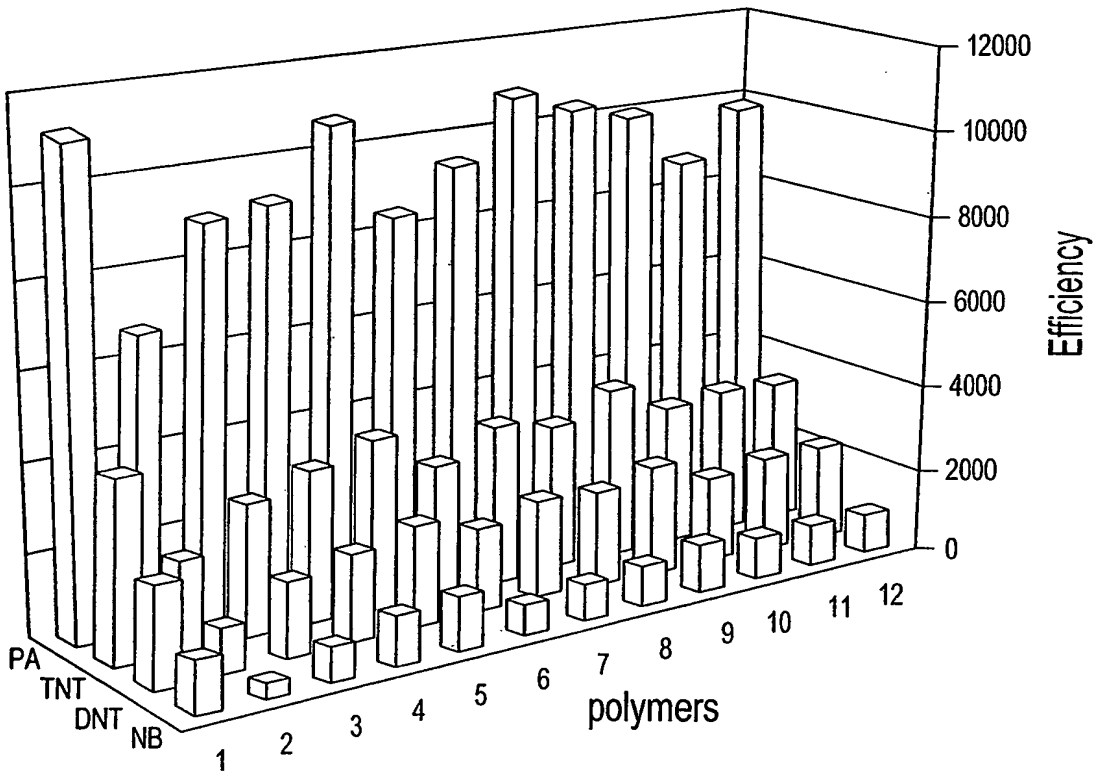

12000
10000
8000
6000
4000
2000
0
Efficiency
PA
TNT
DNT
NB
1
2
3
4
5
6
7
8
9
10
11
12
polymers

FIG. 16

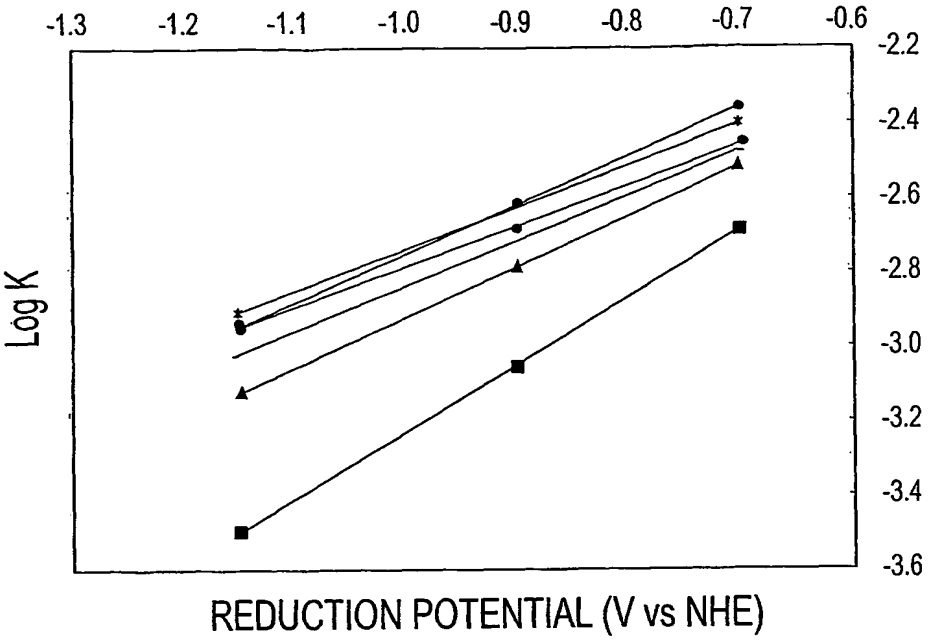

-1.3
-1.2
-1.1
-1.0
-0.9
-0.8
-0.7
-0.6
-2.2
-2.4
-2.6
-2.8
-3.0
-3.2
-3.4
-3.6
Log K
REDUCTION POTENTIAL (V vs NHE)

FIG. 17

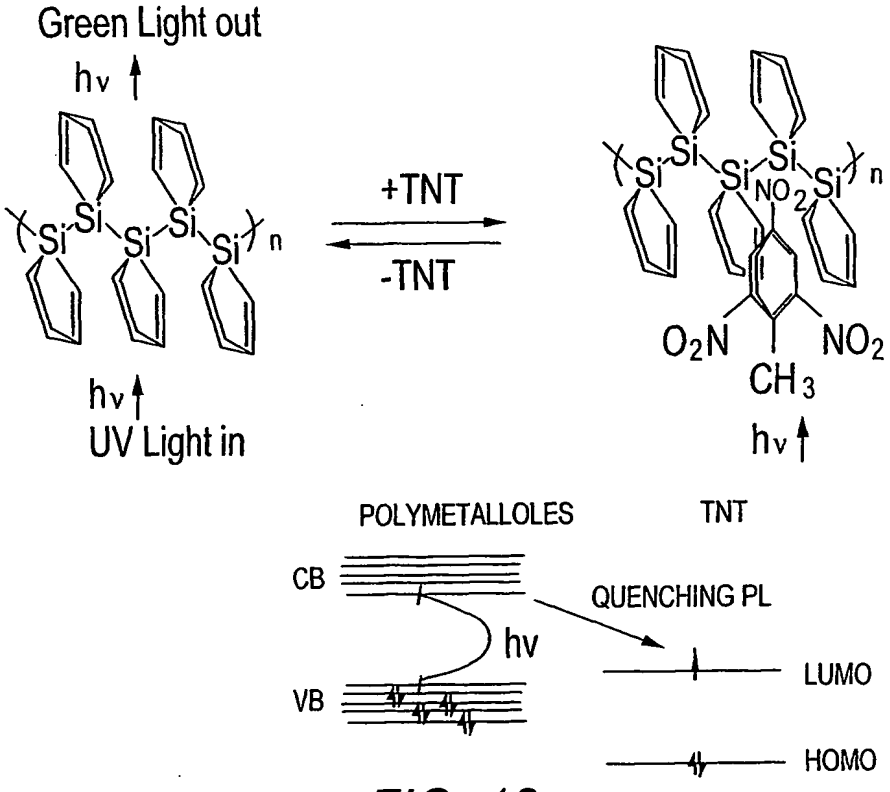

Green Light out
hv
+TNT
-TNT
hv
UV Light in
hv
POLYMETALLOLES
TNT
CB
QUENCHING PL
hv
VB
LUMO
HOMO

FIG. 18

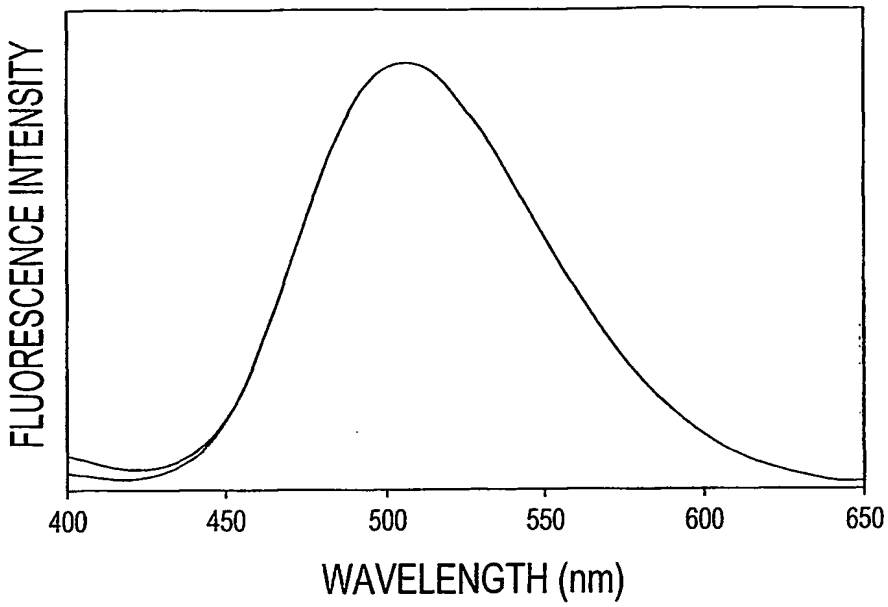

FLUORESCENCE INTENSITY
400
450
500
550
600
650
WAVELENGTH (nm)

FIG. 19

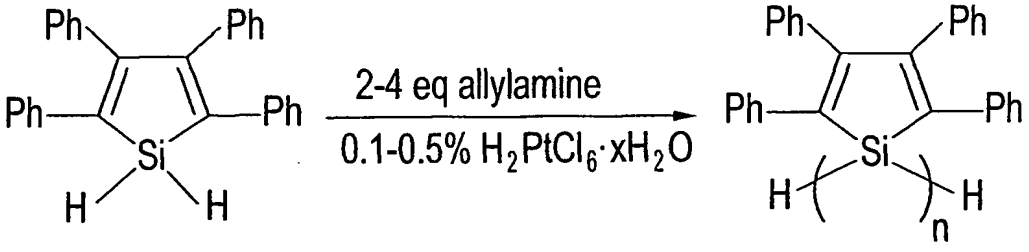

Ph
Ph
Ph
Ph
Si
H
H
2-4 eq allylamine
0.1-0.5% $H_2PtCl_6 \cdot xH_2O$
Ph
Ph
Ph
Ph
Si
H
H
n

FIG. 20